MINISTRY OF TRANSPORT OF THE RUSSIAN FEDERATION
FEDERAL AIR TRANSPORT AGENCY
(ROSAVIATSIYA)

TYPE CERTIFICATE DATA SHEET

№ FATA-36-32A

HELICOPTER Ka-32

Issue 01
February 26, 2018

Models:
- Ka-32A
- Ka-32A11BC

Page	1	2	3	4	5	6	7	8
Issue	01	01	01	01	01	01	01	01
Date	26.02.2018	26.02.2018	26.02.2018	26.02.2018	26.02.2018	26.02.2018	26.02.2018	26.02.2018

This issue of the Type Certificate Data Sheet contains information on the certification basis, restrictions and other conditions, compliance with which is necessary to ensure the level of airworthiness of the Ka-32 helicopter, determined by its certification basis.

Type Certificate Holder	KAMOV COMPANY, Lubertsy, Moscow Region, Russian Federation
Manufacturer	KAMOV COMPANY, Lubertsy, Moscow Region, Russian Federation. KUMAPE COMPANY, Kumertau, Novozarinskaja str., 15a, Russian Federation.
Initial certification data	IAC AR Type Certificate No. 36-32A, dt. 16.07.1993

1. Ka-32A Model

Aircraft description	Co-axial helicopter with the two turboshaft engines and fixed landing gear wheel.
Category	Transport, A and B.
Designation	The KA-32A helicopter is approved for flights under VFR, IFR in the day and night, over the land and water, in icing conditions, internal and external load transportation, and transportation of the persons directly involved with aerial works.
Type design definition	Description of the type design is contained in document: «Type design of the Ka-32A helicopter No Ka-32A-0000TK»
Certification Basis	СБ-32А-29 Certification basis includes: - Airworthiness Standards NLG 32.29, NLG 32.2 dated September 14,1992, effective on the date of the initial issue of this type certificate, harmonized with the U.S. Federal Aviation Regulations Part 29, Transport Category Rotorcraft, Amend. 29-1 through 29-24, effective December 6, 1984; Paragraph 29.1459 of Amend.29-25, effective October 11,1988; параграфы 29.954, 29.963, 29.991, 29.1011, 29.1027 с поправкой 29-26, действующей с 3 октября 1988 года. Вынужденное приводнение по 32.29.801; 32.29.807; 32.29.1411; 32.29.1415. Paragraphs 29.954, 29.963, 29.991, 29.1011, 29.1027 of Amend. 29-26, effective October 3,1988; Ditching 32.29.801; 32.29.807; 32.29.1411; 32.29.1415; Anti-ice protection 32.29.1093 and 32.29.1419. - Requirements for noise level - Aviation Rules Part 36, Sections A, H, O and Chapter 8 of ICAO Annex 16, Volume I, Issue 3, 1993. - Aviation rules Part 34 (АП-34) requirements “Environmental protection. Exhaust emission requirements for aircraft engines. Rules and tests”. - Equivalent level of safety is established for the following items: 32.29.173(b); 32.29.177; 32.29.923(c) and (i); 32.29.1027(b)(1); 32.29.1351 (d)(3); 32.29.1459(a)(5); Appendix B V(a), VII(a)(2), VIII(b)(1).

Centre of Gravity Range

(a) Longitudinal C.G. limits (applicable to all Gross Weights):

VFR	IFR	Flight with the external cargo
+280 to -30 mm	+280 to 0 mm	+280 to 0 mm

(b) Lateral C.G.Iimits (VFR and IFR):

110 mm left of centerline	110 mm right of centerline

Note: station 0 (datum) is located on the Rotor axis.

The serial numbers of the helicopters manufactured at Kamov company, in accordance with the approved Type design

(31033) 6108/01; 8903/06; 8904/07; (31598) 8805/08; (30001) 8603/11; (30005) 8608/14; (31586) 8708/15; (31589) 8711/16; 5235004991117
See Note 1

The serial numbers of the helicopters manufactured at KumAPE company, in accordance with the approved Type design

55-03/014; 60-06/013; 88-08; 98-02; 5902/009; 86-04/011; 62-17/012; 9821; 9102/015; 9822.
See Note 1

2. Ka-32A11BC model (including Ka-32A12)

Aircraft description

Co-axial helicopter with the two turboshaft engines and fixed landing gear wheel.

Category

Transport, A and B.

Designation

The KA-32A11BC helicopter is approved for flights under VFR, IFR in the day and night, over the land and water, in icing conditions, internal and external load transportation, and transportation of the persons directly involved with aerial works.

Type design definition

Description of the type design is contained in document: «Type design of the Ka-32A11BC helicopter No Ka-32A11BC-0000TK, issue 3».

Certification Basis

СБ-32A11BC-29 Certification basis includes:

- Airworthiness Standards NLG 32.29, NLG 32.2 dated September 14,1992, effective on the date of the initial issue of this type certificate, harmonized with the U.S. Federal Aviation Regulations Part 29, Transport Category Rotorcraft, Amend. 29-1 through 29-24, effective December 6, 1984;
Paragraph 29.1459 of Amend.29-25, effective October 11,1988;
Paragraphs 29.954, 29.963, 29.991, 29.1011, 29.1027 of Amend.29-26, effective October 3,1988;
Ditching 32.29.801; 32.29.807; 32.29.1411; 32.29.1415;
Anti-ice protection 32.29.1093 and 32.29.1419.

- Requirements for noise level - Aviation Rules Part 36, Sections A, H, O and Chapter 8 of ICAO Annex 16, Volume I, Issue 3, 1993.

- Aviation rules Part 34 (АП-34) requirements “Environmental protection. Exhaust emission requirements for aircraft engines. Rules and tests”.

Special technical conditions:
- FAR-29 requirements: 29.695(b), 29.853, 29.903(c), 29.1103(d)(2), 29.1121(b), 29.1529, 29.1545(b)(4);
-A32.29.4-PC60F.

Centre of Gravity Range

(a) Longitudinal C.G. limits (applicable to all Gross Weights):

VFR	IFR	Flight with the external cargo
+5000 to +5310 mm	+5000 to +5280 mm	+5000 to +5280 mm

(b) Lateral C.G. Limits (VFR and IFR):

110 mm left of centerline	110 mm right of centerline

Note: station 0 (datum) is located 5280mm forward of Rotor axis.

The serial numbers of the helicopters manufactured at KumAPE company, in accordance with the approved Type design

(31594) 8801/03; (30004) 8607/04; (31585) 8707/05; (31587) 8709/02; 8807/016; (31599) 8809/09; (31600) 8810/10; (9624) 8811/11; (9625) 8812/12; 9708/23; 9709/24; 9710; 9712; 9713; 9714; 9715; 9801; 9804; 9805; 9811; 9812; 9813; 9814; 9815; 9816; 9817; 523324019828; 523324069832; 523324069833, 523324199839; 523324159836; 523324149838; 5233242010001, 5233241710003; 52332405028902/017; 5233242210005; 5233242210006; 5233242110007; 5233242510013; 5233242510014; 5233242510016; 5233242210008; 5233241410009; 5233242010010; 5233242610015; 5233242510017; 5233242610018.
For the Ka-32A11BC as 324.04 – from 9901 to 9906
See Note 1.

3. Pertinent to all Models

Noise characteristics

Noise level EPNdB Aviation rules Part 36 (АП-36)

Helicopter model	M_{max}	engine	take-off	flyover	approach
Ka-32A, Ka-32A11BC	11000	ТВ3-117ВМА	93,5± 1,5	99,4±0,4	96,8±0,3
Limits by АП-36, ICAO Annex 16			100,4	99,4	101,4

Fuel

TS-1, RT (GOST 10227-86) and their mixture with anti-icing additive "fluid I" (GOST 8313-88).
(Ref. to RFM for foreign brands of fuel)

Oil

For the engines	Б-3В
For the APU	
For the gearbox	

Engines

Two turboshaft engines ТВ3-117ВМА or ТВ3-117ВМА series 02, JSC «Klimov» (Ref. Engine Type Certificate Data Sheet No.34-Д).
IAC AR Type Certificate for the engines No. 34-Д, dt. 24.04.2009

Auxiliary power unit (APU)

АИ-9, IAC AR Type Certificate No. 102-ВД, dt. 05.04.1996

Engines limitations

One Engine inoperative (2,5 minute limit):	
Output shaft power (shp), not less	2400
Free turbine speed (Nft) (as indicated by main rotor tachometer*), (%):	
Maximum	89
Minimum	87
Gas generator speed (%)**: Maximum	101,15
Inlet Turbine Temperature, (^{0}C) Maximum	990

One Engine inoperative (30-minute limit):	
Output shaft power (shp), not less	2200
Free turbine speed (Nft) (as indicated by main rotor tachometer*), (%): Maximum Minimum	 89 87
Gas generator speed (%)**: Maximum	 101,15
Inlet Turbine Temperature, (^{0}C) Maximum	 990

One Engine inoperative (Continuous):	
Output shaft power (shp), not less	1700
Free turbine speed (Nft) (as indicated by main rotor tachometer*), (%): Maximum Minimum	 92 88
Gas generator speed (%)**: Maximum (at T* higher than +35°C) Minimum (at T*= - 60°C)	 99 84,4
Inlet Turbine Temperature, (^{0}C) Maximum	 955

Take-off (5 min):	
Output shaft power of each of the two engines (shp), not less	2200
Free turbine speed (Nft) (as indicated by main rotor tachometer*), (%): Maximum Minimum	 89 87
Gas generator speed (%)**: Maximum (at T* higher than +27°C) Minimum (at T*= - 60°C)	 101,15 87,3
Inlet Turbine Temperature, (^{0}C) Maximum	 990

Maximum Continuous:	
Output shaft power of each of the two engines (shp), not less	1700
Free turbine speed (Nft) (as indicated by main rotor tachometer*), (%): Maximum Minimum	 92 88
Gas generator speed (%)**: Maximum (at T* higher than +35°C) Minimum (at T*= - 60°C)	 99 84,4
Inlet Turbine Temperature, (^{0}C) Maximum	 955

* 90,2% main rotor tach. reading corresponds to 100% or 15000 rpm of Free Turbine.
** 100% gas generator tach. reading corresponds to 19537,48 rpm of Gas Generator.
T* - OAT.

APU limits

For APU АИ-9: Minimal selection of compressed air, kg/sec	0,38
Compressed air temperature, C°	Not more than 130
Other APU limitations in accordance with the Type Certificate Data Sheet No.CT 102-ВД	

Rotor Speed Limits

Speed	Power off	Power on	Power on OEI
Min.	70%	83% (below 87% no longer than 30 sec)	73% (below 83% no longer than 10 sec)
Max.	98% (higher than 92% no longer than 8 sec)	98% (higher than 92% no longer than 8 sec)	98% (higher than 92% no longer than 8 sec)

The maximum power delivered through the main gearbox

4850 hsp

Maximum takeoff weight

11000 kg

Helicopter's maximum weight with external load

12700 kg

Maximum internal cargo weight

3700 kg

Maximum allowable floor loading for transport (cargo) compartment:

- 3000 kg/sq.m between frames No.4 to No.7;
- 1500 kg/sq.m between frames No.7 to No.13.

Maximum External Load

5000 kg

Airspeeds limits

Vne Power on at sea level at ISA conditions, (km/h): 260

Vne Power off at sea level, (km/h): 180

Other limitations refer to the Flight Manual.

Minimum crew

1 (pilot) for VFR for A and B Category operations.
2 (one pilot and one flight-navigator) for IFR operations.

Number of seats in the transport compartment

13

Fuel capacity

Total, (liters)	2450
Unusable, (litres)	26

With both front and aft auxiliary tanks installed:

(a) when filler refueling:

Total fuel quantity, (liters)	3450
Unusable fuel, (liters)	26

(b) when pressure refueling (one point refueling):

Total fuel quantity, (liters)	3080
Unusable fuel, (liters)	26

Maximum operating altitude

5000 m

Additional restrictions for the pressure altitude are established by operating rules

Maximum altitude for take-off and landing

3000 m

Outside air temperature (OAT) limitations

-50^0C — $+45^0$C

Note 1

It is allowed to use the uncompleted (shortcut) serial numbers, such as 31594 instead of (31594) 8801/03, 8707 instead of (31585) 8707/05 and etc.

4. The list of approved Major changes to the Ka-32 helicopter type design:

Supplements to Type Certificate, Major change approvals	Major Change Description	Applicability
36-32A/Д1	Replacement of PC-60 single chamber actuator on PC-60F dual chamber one	Ka-32A11BC
СТ36-32A/Д2	Change of airworthiness limitation of the helicopter and its components	Ka-32A Ka-32A11BC
36-32A/Д3	Change of airworthiness limitation of the PC-60F actuator	Ka-32A11BC
36-32A/4	Change of airworthiness limitation of the rotor must bearings	Ka-32A Ka-32A11BC
СТ36-32A/Д5	Introduction of the carbon band into upper rotor blade design	Ka-32A, Ka-32A11BC
36-32A/Д6	Change of airworthiness limitation of the BP-252 gearbox	Ka-32A Ka-32A11BC
36-32A/Д7	Installation of the firefighting system «Simplex»	Ka-32A
36-32A/Д08	Installation of the medical module	Ka-32A11BC
36-32A/Д09	Replacement of the flight and navigation equipment to extend the helicopter operational conditions	Ka-32A11BC version 324.04
36-32A/Д10	Increase of the airframe airworthiness limitations from 16000 hours to 32000 hours for routine conditions or to 24000 hours for routine logging conditions during 30 years of the assigned service time.	Ka-32A11BC
36-32A/Д11	Changing the airworthiness limitations, increasing the service life and time limits of Ka-32A and Ka-32AO helicopters and their components on the basis of commonality with the airworthiness limitations, service life and time limits of the Ka-32A11BChelicopter, approved by IAC AR	Ka-32A
36-32A/Д12	Installing of horizontal and vertical firefighting set	Ka-32A Ka-32A11BC
36-32A/Д13	Installing of the Honeywell KTA 970/KMH 980 Traffic alert and Collision Avoidance System (TCAS I)	Ka-32A11BC
36-32A/Д14	Introduction to the operational documentation of the helicopter the Master minimum equipment list.	Ka-32A11BC
36-32A/ОГИ-15	Installation of the medical module Spectrum Aeromed	Ka-32A11BC

* * *

Original TCDS is signed by Deputy Derector General

Mr. M. Bulanov